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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/617,716	07/14/2003	Atsushi Suzuki	053588-5014	4192
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9629 7590 10/17/2005

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EXAMINER

SHAH, MANISH S

ART UNIT	PAPER NUMBER
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2853

DATE MAILED: 10/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/617,716

Applicant(s)

SUZUKI ET AL.

Examiner

Manish S. Shah

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/1/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 18 is objected to because of the following informalities: Claim 18 is depends on 4, 10, or 16, however the claim 4 is cancel. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 6-10, 18/10 & 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Uchiyama et al. (# US 5798776).

Uchiyama et al. discloses a method for inkjet recording including recording a color image in accordance with recording signals by ejecting from an orifice a black ink and color ink (figure: 6a-6c; 7a-7c), wherein black ink includes anionic or cationic self dispersible carbon black (column: 7, line: 1-10) and the color ink having substance having an opposite polarity to that of the self-dispersible carbon black (see Examples; column: 6, line: 15-67), wherein the carbon black is contained in an amount of 0.1 to 10% by weight of total ink (column: 7, line: 10-15). They also disclose that the printed amount of the color ink to form the black image portion is in a range of 10 to 50% relative to the amount of black ink (see Table: 3, example: 3-4). They also disclose that

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the black image portion in the color image is formed with black ink and the color ink (figure: 6-7), and the ejecting the black ink immediately after the color ink or the color ink immediately after the black ink in the same swath (column: 3, line: 10-26; column: 6, line: 54-60). They also disclose that the black ink and the color ink contain from 0.1 to 2% by weight of a surfactant (column: 8, line: 10-20).

3. Claims 12-16, 18/16 & 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Uchiyama et al. (# US 5798776).

Uchiyama et al. discloses an apparatus for inkjet recording for forming a color image including an ink cartridge for ejecting a black ink and another ink cartridge for ejecting a color ink (column: 4, line: 5-25), wherein black ink includes anionic or cationic self dispersible carbon black (column: 7, line: 1-10) and the color ink having substance having an opposite polarity to that of the self-dispersible carbon black (see Examples; column: 6, line: 15-67), wherein the carbon black is contained in an amount of 0.1 to 10% by weight of total ink (column: 7, line: 10-15). They also disclose that the printed amount of the color ink to form the black image portion is in a range of 10 to 50% relative to the amount of black ink (see Table: 3, example: 3-4). They also disclose that the black image portion in the color image is formed with black ink and the color ink (figure: 6-7), and the ejecting the black ink immediately after the color ink or the color ink immediately after the black ink in the same swath (column: 3, line: 10-26; column: 6, line: 54-60). They also disclose that the black ink and the color ink contain from 0.1 to 2% by weight of a surfactant (column: 8, line: 10-20).

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 6-8, 19 & 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Kaneko (# US 6709082).

Kaneko discloses a method for inkjet recording including recording a color image in accordance with recording signals by ejecting from an orifice a black ink and color ink (figure: 15a-15b), wherein black ink includes anionic or cationic self dispersible carbon black (column: 18, line: 60-67) and the color ink having substance having an opposite polarity to that of the self-dispersible carbon black (column: 19, line: 1-5). They also disclose that the printed amount of the color ink to form the black image portion is in a range of 10 to 50% relative to the amount of black ink (see Table: 1). They also disclose that the black image portion in the color image is formed with black ink and the color ink (see Abstract, column: figure: 15a-15b), and the ejecting the black ink immediately after the color ink or the color ink immediately after the black ink in the same swath, (see Table: 2-5). They also disclose that the black ink and the color ink are expelled 4.5 ng (column: 11, line: 1-5).

5. Claims 12-14, 20 & 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Kaneko (# US 6709082).

Kaneko discloses an apparatus for inkjet recording for forming a color image including an ink cartridge for ejecting a black ink and another ink cartridge for ejecting a

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color ink (figure: 1-10), wherein black ink includes anionic or cationic self dispersible carbon black (column: 18, line: 60-67) and the color ink having substance having an opposite polarity to that of the self-dispersible carbon black (column: 19, line: 1-5). They also disclose that the printed amount of the color ink to form the black image portion is in a range of 10 to 50% relative to the amount of black ink (see Table: 1). They also disclose that the black image portion in the color image is formed with black ink and the color ink (see Abstract, column: figure: 15a-15b), and the ejecting the black ink immediately after the color ink or the color ink immediately after the black ink in the same swath, (see Table: 2-5). They also disclose that the black ink and the color ink are expelled 4.5 ng (column: 11, line: 1-5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 11 & 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchiyama et al. (# US 5798776) in view of Fukushima et al. (# US 5151128).

Uchiyama et al. discloses all the limitation of an ink set, a method of printing and an inkjet recording apparatus except that the black ink includes a compound represented by the formula $R-O-X_nH$, wherein R is functional group having 4 to 8 carbon

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atoms selected from the group consisting of an alkyl group, an alkenyl group, an alkynyl group, a phenyl group, an alkylphenyl group, an alkenylphenyl group and a cycloalkyl group, X is an oxyethylene group or an oxypropylene group; and n is an integer from 1 to 4:

Fukushima et al. teaches that to prevent generation of ink runs and promote drying and penetration of an ink (column: 2, line: 65-68), ink composition includes a compound represented by the formula $R_1-X-O-R_2$, wherein R_1 & R_2 each is an hydrogen atom or an alkyl group, with the proviso that they cannot both be a hydrogen atom, and X is a random polymer of ethylene oxide and polypropylene oxide (column: 2, line: 15-30; see Table: 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink composition of Uchiyama et al. by the aforementioned teaching of Fukushima et al. in order to prevent generation of ink runs and promote drying and penetration of an ink, which gives high quality bleed free printed image.

7. Claims 11 & 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko (# US 6709082) in view of Fukushima et al. (# US 5151128).

Kaneko discloses all the limitation of an ink set, a method of printing and an inkjet recording apparatus except that the black ink includes a compound represented by the formula $R-O-X_nH$, wherein R is functional group having 4 to 8 carbon atoms selected from the group consisting of an alkyl group, an alkenyl group, an alkynyl group, a phenyl

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group, an alkylphenyl group, an alkenylphenyl group and a cycloalkyl group, X is an oxyethylene group or an oxypropylene group; and n is an integer from 1 to 4.

Fukushima et al. teaches that to prevent generation of ink runs and promote drying and penetration of an ink (column: 2, line: 65-68), ink composition includes a compound represented by the formula $R1-X-O-R2$, wherein R1 & R2 each is an hydrogen atom or an alkyl group, with the proviso that they cannot both be a hydrogen atom, and X is a random polymer of ethylene oxide and polypropylene oxide (column: 2, line: 15-30; see Table: 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink composition of Kaneko by the aforementioned teaching of Fukushima et al. in order to prevent generation of ink runs and promote drying and penetration of an ink, which gives high quality bleed free printed image.

8. Claims 6-10, 18/10 & 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Looman et al. (# US 6354693) in view of Kaneko (# US 6709082).

Looman et al. discloses a method for inkjet recording including recording a color image in accordance with recording signals by ejecting from an orifice a black ink and color ink (column: 3, line: 60-67; column: 6, line: 40-65), wherein black ink includes anionic or cationic self dispersible carbon black (column: 4, line: 35-55; column: 6, line: 33-40) and the color ink having substance having an opposite polarity to that of the self-dispersible carbon black (column: 4, line: 35-41), wherein the carbon black is contained in an amount of 0.1 to 15% by weight of total ink (column: 6, line: 23-37). They also

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disclose that the black image portion in the color image is formed with black ink and the color ink (see Abstract, column: 6, line: 40-65), and the ejecting the black ink immediately after the color ink or the color ink immediately after the black ink in the same swath (column: 3, line: 10-26; column: 6, line: 54-60). They also disclose that the black ink and the color ink contain from 0.001 to 5% by weight of a surfactant (column: 4, line: 49-67; column: 5, line: 1-67).

Looman et al. differs from the claim of the present invention is that the printed amount of the color ink to form the black image portion is in a range of 10 to 50% relative to the amount of black ink.

Kaneko teaches that to get the sharp and clear printed image, the printed amount of the color ink to form the black image portion is in a range of 10 to 50% relative to the amount of black ink (see Table: 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the inkjet recording method of Looman et al. by the aforementioned teaching of Kaneko in order to sharp and clear high quality printed image.

9. Claims 12-16, 18/16 & 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Looman et al. (# US 6354693) in view of Kaneko (# US 6709082).

Looman et al. discloses an apparatus for inkjet recording for forming a color image including an ink cartridge for ejecting a black ink and another ink cartridge for ejecting a color ink (column: 3, line: 10-26), wherein black ink includes anionic or cationic self dispersible carbon black (column: 4, line: 35-55; column: 6, line: 33-40) and

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the color ink having substance having an opposite polarity to that of the self-dispersible carbon black (column: 4, line: 35-41), wherein the carbon black is contained in an amount of 0.1 to 15% by weight of total ink (column: 6, line: 23-37). They also disclose that the black image portion in the color image is formed with black ink and the color ink (see Abstract, column: 6, line: 40-65), and the ejecting the black ink immediately after the color ink or the color ink immediately after the black ink in the same swath (column: 3, line: 10-26; column: 6, line: 54-60). They also disclose that the black ink and the color ink contain from 0.001 to 5% by weight of a surfactant (column: 4, line: 49-67; column: 5, line: 1-67).

Looman et al. differs from the claim of the present invention is that the printed amount of the color ink to form the black image portion is in a range of 10 to 50% relative to the amount of black ink.

Kaneko teaches that to get the sharp and clear printed image, the printed amount of the color ink to form the black image portion is in a range of 10 to 50% relative to the amount of black ink (see Table: 1).

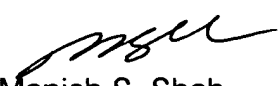
It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the inkjet recording method using inkjet recording apparatus of Looman et al. by the aforementioned teaching of Kaneko in order to sharp and clear high quality printed image.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manish S. Shah whose telephone number is (571) 272-2152. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Manish S. Shah
Primary Examiner
Art Unit 2853

MSS

10/14/05